stabilizing control of optical wavelength with said selected control mode.

18. (Twice Amended) An optical signal transmitter comprising:

a laser diode for outputting an optical signal to be transmitted;

a driving current source for driving said laser diode;

a parameter deviation detector to detect a first control deviation of one parameter responsible for causing variations of optical wavelength output from said laser diode from a predetermined target value;

an optical wavelength deviation detector to detect a second control deviation of optical wavelength output from said laser diode from a predetermined target value;

a selector connected to said detectors so as to select either of said first and second control deviations; and

a controller [arranged] connected to the output of said selector and the input of said laser diode to control one of said parameters so that said selected control deviation is reduced.

22. (Amended) An optical signal transmitter comprising:

a laser module including a laser element, a temperature sensor and a cooling/heating element;

a first controller for stabilizing said optical wavelength;

a second controller for stabilizing said optical wavelength; and

a selector [arranged so as] to select either of output signals from said first and second controllers according to the external conditions, so that stabilizing control of the optical

Replacement pages

wavelength of said laser element is performed according to the output signal from the selected controller, wherein:

said first controller comprises a temperature monitor coupled with said temperature sensor to monitor the temperature of said laser element detected by the temperature sensor, a first comparator coupled with said temperature monitor to detect the difference between the output value of the temperature monitor and a laser temperature control target value, and a first current controller coupled with said cooling/heating element to control the current flowing in the cooling/heating element according to an output signal from said first comparator, and

said second controller comprises an optical coupler arranged to split the output light from the laser module, an optical wavelength monitor coupled with said optical coupler to monitor the wavelength of the split output light, a second comparator coupled with said optical wavelength monitor to detect the difference between the monitored optical output wavelength value and a wavelength control target value, and a second current controller coupled with said cooling/heating element to control the current flowing in the cooling/heating element according to an output signal from said second comparator.

25. (Twice Amended) A control apparatus for stabilizing the wavelength of light output from a laser element, comprising:

a plurality of control circuits [configured] for outputting control signals to control the optical wavelength of said laser element in respectively different control modes, wherein each control mode is based on different control parameters representing external conditions detected by said control circuits that cause a wavelength variation, and

selecting means for selecting at least one of control signals output from said control circuits according to the status of electrical signals representing the external conditions of said laser element, and applying the selected control signal to said laser element, thereby achieving stabilizing control of optical wavelength with said different control modes selectively according to the external conditions of said laser element.

27. (Twice Amended) A control method for stabilizing the wavelength of light output from a laser element, comprising the steps of:

selecting at least one of a plurality of control circuits, [configured] to output a control signal for controlling the optical wavelength of said laser element in respectively different control modes according to the status of external conditions of said laser element, wherein each control mode is based on different control parameters representing external conditions detected by said control circuit that cause a wavelength variation, and

applying a control signal output from said selected control circuit to said laser element, thereby achieving stabilizing control of optical wavelength with the control mode of said selected control circuit.

REMARKS

In the present application;

Claims 17-28 are pending.

Claims 17-28 stand rejected.

Claims 17, 18, 22, 25 and 27 have been amended.